

ABSTRACT OF THE DISCLOSURE

A curable underfill encapsulant composition that is applied directly onto semiconductor wafers before the wafers are diced into individual chips.

- 5 The composition comprises a thermally curable resin system comprising an epoxy resin, a phenol-containing compound such as phenol or phenolic resin, a solvent, an imidazole-anhydride curing agent, inorganic fillers, fluxing agents, and optionally, wetting agents. Various other additives, such as defoaming agents, adhesion promoters, flow additives and rheology modifiers
- 10 may also be added as desired. The underfill encapsulant is B-stageable to provide a coating on the wafer that is smooth, non-tacky and will allow the wafer to be cleanly diced into individual chips. A method for producing an electronic package containing the B-stageable material may also utilize an unfilled liquid curable fluxing material on the substrate to which the chip is to
- 15 be attached.